Table 2-H-18g
Bakersfield to Los Angeles – High-Speed Train Alignment Evaluation Matrix
Los Angeles Union Station – San Diego Approach Segments

Alignment = Alignment Carried Forward **Alignment** = Alignment Eliminated = Primary or Secondary Reason for Elimination

Evaluation Criteria	UPRR/El Monte/Colton	State Route 60	Interstate 10	State Route 101
Maximize Ridership/Revenue Potential.				
Travel Time	9.6 to 17.1 min. depending upon LAUS location 3	6.6 to 14.7 min. depending upon LAUS location 3	2.7 to 11.7 min. depending upon LAUS location 3	0.2 min. 5
Length	2.3 to 3.0 miles (3.8 to 4.8 km) depending upon LAUS location 3	1.7 to 2.2 miles (2.8 to 3.5 km) depending upon LAUS location 3	1.7 to 3.0 miles (2.7 to 4.9 km) depending upon LAUS location 4	0.2 to 0.4 miles (0.3 to 0.6 km) depending upon LAUS location 5
Population/Employment Catchment	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Maximize Connectivity and Accessibility.				
Intermodal Connections	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Minimize Operating and Capital Costs.				
Length	2.3 to 3.0 miles (3.8 to 4.8 km) depending upon LAUSD location 4	1.7 to 2.2 miles (2.8 to 3.5 km) depending upon LAUS location 5	1.7 to 3.0 miles (2.7 to 4.9 km) depending upon LAUS location 4	0.2 to 0.4 miles (0.3 to 0.6 km) depending upon LAUS location 5
Operational Issues	• Allows flexibility in LAUS location alternatives. • Requires stub-end station at LAUS or slower speed, looping connections to San Diego. 3	• Limited LAUS station site alternatives. 2	• South of 101 LAUS station alternatives (Options 2 and 3) not suitable for this alignment. 2	• Appropriate for access through LAX only. • Limited LAUS site alternatives for this alignment 1

Evaluation Criteria	UPRR/El Monte/Colton	State Route 60	Interstate 10	State Route 101
Construction Issues	• Aerial structures	• Aerial structures • Constrained area	• Aerial structures • Constrained area	• Aerial structures • Constrained area
	3	2	2	2
Capital Cost	$0.1 to $0.3 Billion VHS $0.2 to $0.3 Billion Maglev depending upon LAUS location	$0.2 Billion VHS $0.2 Billion Maglev depending upon LAUS location	$0.1 to $0.3 Billion VHS $0.1 to $0.3 Billion Maglev depending upon LAUS location	$.010 to $0.3 Billion VHS $.02 to $0.3 Billion Maglev depending upon LAUS location
	3	3	3	3
Right-of-Way Issues/Cost	• Railroad relocation.	• Follows existing, constrained freeway corridor.	• Follows existing, constrained freeway corridor.	• Follows existing, constrained freeway corridor.
	3	1	1	1
Maximize Compatibility with Existing and Planned Development.				
Land Use Compatibility and Conflicts	• May create indirect impacts on mixed residential/ commercial/industrial land uses adjacent to this alignment. • Some residential land uses on the north side of this alignment. • Alignment passes by Lincoln Park.	• May create indirect impacts on a mix of residential/ commercial/industrial land uses adjacent to this alignment. • North side of SR-60 is a residential area for two miles in length.	• May directly impact a mix of residential/commercial/ industrial land uses adjacent to this alignment. • Adjacent to residential area for a distance of 2.5 miles.	• Alignment goes to LAX. • May directly impact a mix of industrial/ commercial/ government/ residential land uses adjacent to this alignment. • Within 200 feet of Belmont High School. • Within 200 to 400 feet of an elementary school. • Passes by 0lvera Street in downtown Los Angeles.
	2	1	1	3

Evaluation Criteria	UPRR/El Monte/Colton	State Route 60	Interstate 10	State Route 101
Visual Quality Impacts	• At grade along south edge of Lincoln Park. Existing rail line. Balance of first tier viewers are commercial/industrial.	• May go through an elementary school north of 4th St. • Immediately adjacent to elementary school on south side of SR-60. • Adjacent to Boyle Heights Sports Park. • W/in 400 ft. of elementary school. • Ramon Garcia Recreation Center on north side of SR-60. Little impact. • North side of SR-60, res. Area for 2 mi. in length. (SR-60 is between res. area and Option 1A).	• At grade along south side of I-10: • Adjacent to res. area for distance of 2.5 mi. • W/in 250 feet of Prospect Park. • W/in 500 feet of elementary school.	• At grade along south side of SR-101: • W/in 200 ft. of high school. • W/in 200 to 400 ft. of elementary school. • Ends just before Echo Park.
	5	3	2	3
Minimize Impacts on Natural Resources.				
Water Resources	No Impacts (closely approaches one potential wetland).	No Impacts.	No impacts.	No impacts.
	4	5	5	5
Floodplain Impacts	Crosses LA River.	Crosses LA River.	Crosses LA River.	Crosses LA River.
	4	4	4	4
Threatened & Endangered Species Impacts	No impacts.	No impacts.	No impacts.	No impacts.
	5	5	5	5
Minimize Impacts on Social and Economic Resources.				
Environmental Justice Impacts (Demographics)	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.

Evaluation Criteria	UPRR/El Monte/Colton	State Route 60	Interstate 10	State Route 101
Farmland Impacts	• The alignment is located in an urban area with no developable farmland.	• The alignment is located in an urban area with no developable farmland	• The alignment is located in an urban area with no developable farmland.	• The alignment is located in an urban area with no developable farmland.
	5	5	5	5
Minimize Impacts on Cultural Resources.				
Cultural Resources Impacts	• No recorded resources on GIS, except at Union Station. • Overall probable impact is low to moderate; follows existing railroad lines.	• No recorded resources on GIS, except at Union Station. • Overall probable impact is moderate to high; crosses part of downtown before following existing freeway.	• Few recorded resources on GIS. • Overall probable impact is moderate; follows existing freeway.	• Numerous recorded resources on GIS. • Overall probable impact is moderate to high; follows existing freeway through older neighborhood.
	5	2	4	2
Parks & Recreation/Wildlife Refuge Impacts	• Low Potential Impact, Visual Quality Only. • Passes Lincoln Park.	• Low Potential Impact, Visual Quality Only. • Passes Boyle Heights Sports Center Park, Ramon Garcia Recreation Center.	• Low Potential Impact, Visual Quality Only. • Passes Ramona Gardens Park.	• High Potential Impact. • Crosses over El Pueblo de Los Angeles State Historic Park.
	3	2	3	1
Maximize Avoidance of Areas with Geologic and Soils Constraints.				
Soils/Slope Constraints	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.
Seismic Constraints	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.

Evaluation Criteria	UPRR/El Monte/Colton	State Route 60	Interstate 10	State Route 101
Maximize Avoidance of Areas with Potential Hazardous Materials.				
Hazardous Materials/Waste Constraints	• There are approximately 20 CERCLIS, SPL, or SCL sites.	• There are approximately 10 CERCLIS, SPL, or SCL sites.	• There are approximately 10 CERCLIS, SPL, or SCL sites.	• There are fewer than 10 CERCLIS, SPL, or SCL sites.
	3	4	4	4

1 2 3 4 5
Least Favorable **Most Favorable**

Table 2-H-18g continued
Bakersfield to Los Angeles – High-Speed Train Alignment Evaluation Matrix
Los Angeles Union Station – San Diego Approach Segments

Alignment = Alignment Carried Forward **Alignment** = Alignment Eliminated = Primary or Secondary Reason for Elimination

Evaluation Criteria	UPRR/Whittier Jct.	BNSF/Hobart	Interstate 5	BNSF/Harbor Div.
Maximize Ridership/Revenue Potential.				
Travel Time	4.2 to 36.0 min. depending upon LAUS location 2	4.5 to 36.3 min. depending upon LAUS location 2	2.7 to 33.0 min. depending upon LAUS location 2	6.3 to 40.2 min. depending upon LAUS location 1
Length	2.1 to 5.1 miles (3.5 to 8.3 km) depending upon LAUS location 3	2.3 to 5.2 miles (3.8 to 8.4 km) depending upon LAUS location 2	1.4 to 4.0 miles (2.3 to 6.5 km) depending upon LAUS location 3	3.3 to 6.2 miles (5.3 to 10.0 km) depending upon LAUS location 1
Population/Employment Catchment	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Maximize Connectivity and Accessibility.				
Intermodal Connections	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Minimize Operating and Capital Costs				
Length	2.1 to 5.1 miles (3.5 to 8.3 km) depending upon LAUS location 3	2.3 to 5.2 miles (3.8 to 8.4 km) depending upon LAUS location 2	1.4 to 4.0 miles (2.3 to 6.5 km) depending upon LAUS location 3	3.3 to 6.2 miles (5.3 to 10.0 km) depending upon LAUS location 1
Operational Issues	• Alignment best suited to LAUS and River station alternatives (Options 1, 4, and 5). • Poor alignment for South of 101 LAUS location alternatives (Options 2 and 3). 4	• Alignment best suited to LAUS and River station alternatives (Options 1, 4, and 5). • Poor alignment for South of 101 LAUS location alternatives (Options 2 and 3). 4	• Alignment best suited to River station alternatives (Options 4 and 5). • Poor alignment for South of 101 LAUS location alternatives (Options 2 and 3). 3	• Alignment best suited to River station alternatives (Options 4 and 5). • Poor alignment for South of 101 LAUS location alternatives (Options 2 and 3). 1

Evaluation Criteria	UPRR/Whittier Jct.	BNSF/Hobart	Interstate 5	BNSF/Harbor Div.
Construction Issues	• Aerial structures.	• Aerial structures.	• Aerial structures. • Constrained area.	• Special aerial structures to provide access over north end of Alameda Corridor.
	5	4	2	1
Capital Cost	$0.1 to $0.3 Billion VHS $0.1 to $0.3 Billion Maglev depending upon LAUS location	$0.1 to $0.3 Billion VHS $0.1 to $0.3 Billion Maglev depending upon LAUS location	$0.1 to $0.3 Billion VHS $0.1 to $0.3 Billion Maglev depending upon LAUS location	$0.2 to $0.4 Billion VHS $0.2 to $0.4 Billion Maglev depending upon LAUS location
	3	3	3	1
Right-of-Way Issues/Cost	• Requires railroad relocation high-volume freight corridor.	• Requires railroad relocation high-volume freight corridor.	• Follows existing constrained freeway corridor.	• Corridor owned by MTA.
	2	2	1	4
Maximize Compatibility with Existing and Planned Development.				
Land Use Compatibility and Conflicts	• Alignment is an existing railroad ROW. • Alignment may indirectly impact existing industrial/ commercial land uses. • May go through an elementary school north of 4th street.	• Most of the ROW needed for this alignment is already used for railroad purposes. • Alignment may import existing industrial/ commercial land uses. • May go through an elementary school north of 4th street.	• Goes through existing residential area for 0.5 miles. • Adjacent to residential areas for length of 1.2 miles. • Some commercial land uses adjacent to this alignment.	• Alignment is an existing railroad ROW. • Alignment is currently abutted by existing industrial/commercial land uses.
	4	4	2	5
Visual Quality Impacts	• May go through an elementary school site north of 4th St. • Balance of alignment is industrial.	• May go through an elementary school site north of 4th St. • Balance of alignment is industrial.	• May go through an elementary school site north of 4th St. • Goes through an existing residential area for 0.5 mi. along I-5. • Adjacent to residential area for length of 1.2 mi. • Immediately adjacent to south edge of Ramon Garcia Recreation Center. • Immediately adjacent to elementary school.	• May go through an elementary school site north of 4th St. • Balance of alignment is commercial/industrial. •
	4	4	2	4

Evaluation Criteria	UPRR/Whittier Jct.	BNSF/Hobart	Interstate 5	BNSF/Harbor Div.
Minimize Impacts on Natural Resources				
Water Resources	No Impacts	No Impacts	No Impacts	No Impacts
	5	5	5	5
Floodplain Impacts	• Crosses Los Angeles River.	• Crosses Los Angeles River.	• Crosses Los Angeles River.	• Crosses Los Angeles River.
	4	4	4	4
Threatened & Endangered Species Impacts	No impacts	No impacts	No impacts	No impacts
	5	5	5	5
Minimize Impacts on Social and Economic Resources.				
Environmental Justice Impacts (Demographics)	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.
Farmland Impacts	• The alignment is located in an urban area with no developable farmland.	• The alignment is located in an urban area with no developable farmland.	• The alignment is located in an urban area with no developable farmland.	• The alignment is located in an urban area with no developable farmland.
	5	5	5	5

Evaluation Criteria	UPRR/Whittier Jct.	BNSF/Hobart	Interstate 5	BNSF/Harbor Div.
Minimize Impacts on Cultural Resources				
Cultural Resources Impacts	• Few recorded resources on GIS. • Overall probable impact is moderate; parallels course of Los Angeles River before following existing railroad tracks.	• Few recorded resources on GIS. • Overall probable impact is moderate; parallels course of Los Angeles River before following existing railroad tracks.	• Few recorded resources on GIS. • Overall probable impact is moderate to high; crosses part of downtown before following existing freeway.	• Few recorded resources on GIS. • Overall probable impact is high; parallels Los Angeles River before crossing urban neighborhoods.
	3	3	2	1
Parks & Recreation/Wildlife Refuge Impacts	• No park resources located.	• No park resources located.	• Low Potential Impact, Visual Quality Only. • Passes Ramon Garcia Recreation Center.	• No park resources located.
	5	5	4	5
Maximize Avoidance of Areas with Geologic and Soils Constraints.				
Soils/Slope Constraints	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.
Seismic Constraints	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.	To be determined by Inland Empire and LOSSAN Corridor teams.
Maximize Avoidance of Areas with Potential Hazardous Materials.				
Hazardous Materials/Waste Constraints	• There are approximately 10 CERCLIS, SPL, or SCL sites	• There are approximately 20 CERCLIS, SPL, or SCL sites	• There are fewer than 10 CERCLIS, SPL, or SCL sites	• There are approximately 20 CERCLIS, SPL, or SCL sites
	4	3	4	3

1 2 3 4 5
Least Favorable **Most Favorable**